Amendments to the Claims

1. (Currently Amended) A method for controlling a dehydration speed of a washing machine with a drum driven by an induction motor having a number of poles and a voltage phase control circuit, comprising the steps of:

setting a dehydration ~~drum~~ rotation speed;

~~establishing a range of the set dehydration drum rotation speeds including the set dehydration speed and at least one different dehydration speed;~~

determining if the set dehydration speed falls within any of at least two different dehydration speed ranges;

changing a number of poles of the motor according to ~~the established range of the set dehydration speed~~ which of the different dehydration speed ranges into which the set dehydration speed falls, wherein the number of poles for one of the different dehydration speed ranges differs from the number of poles for another of the different dehydration speed ranges;

~~calcuating~~ determining performance evaluating motor torque-speed curves for multiple dehydration speeds in the established range; and

controlling a rotation speed of the motor of the washing machine for the amount of laundry in the washing machine by controlling the phase of the motor voltage phase control circuit in accordance with the performance evaluating torque-speed curves.

2. (Canceled)

3. (Original) The method of claim 1, wherein the motor is an induction motor.

4. (Original) The method of claim 1, wherein the washing machine is a drum washing machine.

5. (Previously Presented) The method of claim 1, wherein the step for changing the number of the poles of the motor changes the number of the poles to 4 or 8 poles.

6-7. (Canceled)

8. (Previously Presented) The method of claim 1, wherein the performance evaluating motor torque-speed curves are calculated on the basis of a sensed amount of laundry in the washing machine.

9-15. (Canceled)

16. (Previously Presented) The method of claim 1, wherein the motor voltage phase control circuit has fire angles and the step of controlling the phase of the motor voltage phase control circuit in accordance with the performance evaluating torque-speed curves comprises the steps of:

sensing a fire angle corresponding to the dehydration speed; and

varying a voltage that is inputted to the induction motor according to the sensed fire angle.

17. (Currently Amended) The method of claim 1, wherein ~~the established~~ each dehydration speed range includes three motor rotation speeds.

18. (Previously Presented) The method of claim 17, wherein the set speed is the lowest of the three motor rotation speeds.

19. (Currently Amended) The method of claim 17, wherein the set speed is 400 RPM and the two other speeds in ~~the established~~ a dehydration speed range are 600 RPM and 800 RPM.

20. (Currently Amended) The method of claim 17, wherein the set speed is 1000 RPM and the other two speeds in ~~the established~~ a dehydration speed range ~~of speeds~~ are 1200 RPM and 1400 RPM.

21. (New) A method of controlling a dehydration operation of a washing machine having a drum, a motor, a sensor and a controller, the method comprising:

sensing, by the sensor, at least an amount of laundry items in the drum based on a rotation speed of the motor; and

controlling, by the controller, a number of poles of the motor to operate at a first range of

dehydration speeds or a second range of dehydration speeds according to the sensed amount of laundry items, wherein the number of poles for the first range differs from the number of poles for the second range.

22. (New) The method of claim 21, wherein the controlling step is based upon a relationship between a plurality of dehydration operation speeds of the motor, a load torque applied to the drum, and input voltages applied to the motor.

23. (New) The method of claim 22, wherein the relationship is determined by deciding certain phase control patterns related to a fire angle of the motor, and calculating certain motor properties related to at least one of dehydration RPM and motor performance with respect to the load torque and efficiency characteristics.

24. (New) The method of claim 23, wherein a number of poles of a stator part of the motor to be selected for operation is adjusted depending on whether the motor is operated at the first range of dehydration speeds or the second range of dehydration speeds.

25. (New) The method of claim 24, wherein the method is repeated until predetermined satisfactory performance results are obtained.

26. (New) The method of claim 25, wherein the steps of sensing and controlling result in minimal vibrations and noise during the dehydration operation of the washing machine.

27. (New) A control unit to control a dehydration operation of a washing machine having a drum and a motor, the circuit comprising:

a motor sensor operatively connected with the drum to sense an amount of laundry items therein based on a rotation speed of the motor; and

a phase control circuit operatively connected with the motor to control a phase characteristic of voltage to be applied to the motor based on a number of stator poles of the motor selected for use depending on whether the motor operates at a first range of dehydration speeds or a second range of dehydration speeds according to the sensed amount of laundry items, wherein the number of stator poles for the first range differs from the number of stator poles for the second range.

28. (New) The control unit of claim 27, wherein the motor sensor and the phase control circuit allow the motor to operate at the first range of dehydration speeds or the second range of dehydration speeds based upon torque-speed curves that provide a relationship between a plurality of dehydration operation speeds of the motor, a load torque applied to the drum, and input voltages applied to the motor.

29. (New) The control unit of claim 28, wherein the relationship is determined by deciding certain phase control patterns and calculating certain motor properties.

30. (New) The control unit of claim 29, wherein the phase control patterns are related to a fire angle of the motor, and the motor properties are related to at least one of dehydration RPM and motor performance with respect to the load torque and efficiency characteristics.

31. (New) The control unit of claim 30, wherein the phase control circuit comprises a gate control semiconductor switch.

32. (New) A washing machine comprising:

a drum to receive laundry items;

a motor operatively connected with the drum to provide rotation thereof;

a sensor operatively connected with the drum to sense at least an amount of the laundry items in the drum based on a rotation speed of the motor; and

a controller operatively connected with the motor and the sensor to set a dehydration motor speed according to the sensed amount of laundry, to determine if the set dehydration speed falls within any of at least two different dehydration speed ranges, and to control a number of poles of the motor to perform an appropriate dehydration operation according to the sensed amount of laundry items, wherein the number of stator poles differs for each different speed range.

33. (New) The washing machine of claim 32, wherein the motor is operated at a first range of dehydration speeds or a second range of dehydration speeds based upon torque-speed curves that provide a relationship between a plurality of dehydration operation speeds of the motor, a load torque applied to the drum, and input voltages applied to the motor.

34. (New) The washing machine of claim 32, wherein, if a dehydration speed between about 400 to 800 is set, the motor is operated at a first range of dehydration speeds and eight poles of a stator part of the motor are selected for use.

35. (New) The washing machine of claim 32, wherein, if a dehydration speed between about 1000 to 1400 is set, the motor is operated at a second range of dehydration speeds and four poles of a stator part of the motor are selected for use.

36. (New) The washing machine of claim 32, wherein the sensor also senses a kind of the laundry items in the drum based on the rotation speed of the motor.